COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE

BIOLOGICAL RESOURCES

LAND USE AND ENVIRONMENT GROUP

Department of Planning and Land Use
Department of Public Works

September 26, 2006

APPROVAL

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Biological Resources** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements and were considered by the Director of Planning and Land Use, in coordination with the Director of Public Works on the 26th day of September, 2006.

GARY PRYOR
Director of Planning and Land Use

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Director of Public Works

Attest: ERIC GIBSON
Deputy Director of Planning and Land Use

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Biological Resources** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements and have hereby been approved by the Deputy Chief Administrative Officer (DCAO) of the Land Use and Environment Group on the 26th day of September, 2006. The Director of Planning and Land Use is authorized to approve revisions to these Guidelines for Determining Significance and Report Format and Content Requirements for Biological Resources, except any revisions to the Guidelines for Determining Significance presented in Chapter 4.0 must be approved by the Deputy CAO.

Approved, September 26, 2006

CHANDRA WALLAR
Deputy CAO

EXPLANATION

These Guidelines for Determining Significance for Biological Resources and information presented herein shall be used by County staff for the review of discretionary projects and environmental documents pursuant to the California Environmental Quality Act (CEQA). These Guidelines present a range of quantitative, qualitative, and performance levels for particular environmental effects. Normally, (in the absence of substantial evidence to the contrary), an affirmative response to any one Guideline will mean the project will result in a significant effect, whereas effects that do not meet any of the Guidelines will normally be determined to be "less than significant." Section 15064(b) of the State CEQA Guidelines states:

> "The determination whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on factual and scientific data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

These Guidelines shall assist in providing a consistent, objective and predictable evaluation of significant effects. These Guidelines are not binding on any decision-maker and should not be substituted for the use of independent judgment to determine significance or the evaluation of evidence in the record. The County reserves the right to modify these Guidelines in the event of scientific discovery or alterations in factual data that may alter the common application of a Guideline.

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ACOE	Army Corps of Engineers
BMO	Biological Mitigation Ordinance
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CSS	Coastal Sage Scrub
DPLU	Department of Planning and Land Use
DPR	Department of Parks and Recreation
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FMP	Framework Management Plan
HCP	Habitat Conservation Plan
HLP	Habitat Loss Permit
HMP	Habitat Management Plan
MBTA	Migratory Bird Treaty Act
MSCP	Multiple Species Conservation Program
NCCP	Natural Communities Conservation Plan
RCA	Resource Conservation Areas
RPO	County of San Diego Resource Protection Ordinance
SAMP	Special Area Management Plan
USFWS	United States Fish and Wildlife Service
USC	United States Code

INTRODUCTION

This document provides guidance for evaluating adverse environmental effects that a proposed project may have on biological resources. These Guidelines should be consulted during the evaluation of any biological resource pursuant to CEQA. Specifically, this document addresses the following questions listed in the California Environmental Quality Act (CEQA) Guidelines, Appendix G, IV. Biological Resources and IX. Land Use and Planning:

IV. Biological Resources – Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?

IX. Land Use and Planning – Would the project:

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

XVII. Mandatory Findings of Significance

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or

wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

1.0 GENERAL PRINCIPLES AND EXISTING CONDITIONS

San Diego County has long been known as a unique environment for biological resources. Both the number and diversity of the habitats and species present in the County far exceeds that of most other counties in the United States. Several factors are responsible for this unique biological environment, including climate, geology, topography, microhabitats, and endemism.

The loss of native habitat to development and agricultural uses over the last several decades has caused many of the region's biological resources to become increasingly rare. Some habitat types now occupy less than 5-10% of their historical range. The majority of habitat loss has occurred along the coast and inland mesas. Hence, most of the habitat types that have experienced the greatest losses and are now considered the most sensitive are found within these areas, such as southern maritime chaparral, vernal pools, coastal bluffs and dunes, maritime succulent scrub and freshwater habitats. Other habitat types, such as coastal sage scrub, grasslands, oak woodlands and various chaparral habitats are becoming more sensitive as residential development extends further into previously rural areas in the north and along the eastern foothills of the County.

The far eastern parts of the County, from the mountain areas to the desert regions, have been left relatively intact thus far and may remain so given that large portions of these areas are publicly owned. However, some habitat types in these areas, such as coniferous forest, Colorado Desert wash scrub, desert dunes, and desert sink scrub, are still considered sensitive for reasons other than historical loss, such as limited distribution, the potential to host sensitive species, or the inability to recover from disturbance.

Today, San Diego supports over 400 sensitive plants and animals. These species range from uncommon to critically endangered. Some of these species require immediate, proactive measures, particularly those that are already listed as threatened or endangered. For others, extirpation or extinction is not quite so imminent, but their long-term survival may depend upon the precautionary actions taken now, including ensuring that a sufficient amount of native habitat is preserved in a viable manner. Refer to Tables 2 and 3 for lists of County-sensitive plants and wildlife.

Most of the County's conservation policies focus on preservation at the ecosystem and habitat level. The single species approach is only used for particularly sensitive species or those species with unusual life history needs. In all cases, any single-species methods are used in conjunction with the habitat or ecosystem-level approach. The County of San Diego has established policies that aim to balance the needs of humans with the need to protect biological resources. The County's policies have been designed to maintain the optimal health and viability of each ecosystem and habitat given the existing and potential environmental conditions and constraints.

2.0 EXISTING REGULATIONS AND STANDARDS

Several Federal, State and local regulations have been established to protect and conserve biological resources. The descriptions below provide a brief overview of the most appropriate regulations and their respective requirements.

2.1 Federal Regulations and Standards

Federal Endangered Species Act[1]

[http://www4.law.cornell.edu/uscode/16/ch35.html]

Enacted in 1973, the Endangered Species Act (ESA) provides for the conservation of threatened and endangered species and their ecosystems. The Act prohibits the "take" of threatened and endangered species except under certain circumstances and only with authorization from the U.S. Fish and Wildlife Service (USFWS) through a permit under Section 4(d), 7 or 10(a) of the Act. Under the Endangered Species Act, "take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Migratory Bird Treaty Act[2]

[http://www4.law.cornell.edu/uscode/16/ch7schII.html]

Congress passed the Migratory Bird Treaty Act (MBTA) in 1918 to prohibit the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. The prohibition applies to birds included in the respective international conventions between the U.S. and Great Britain, the U.S. and Mexico, the U.S. and Japan, and the U.S. and Russia.

Bald and Golden Eagle Protection Act[3]

[http://www4.law.cornell.edu/uscode/html/uscode16/usc_sup_01_16_10_5A_20_II.html]

When first enacted in 1940, the Act prohibited the take, transport or sale of bald eagles, their eggs or any part of an eagle except where expressly allowed by the Secretary of Interior. The Act was amended in 1962 to extend the prohibitions to the golden eagle.

[1] U.S.C Title 16, Chapter 35, Sections 1531-1544.
[2] U.S.C Title 16, Chapter 7, Subchapter II, Sections 703-712.
[3] U.S.C Title 16, Chapter 5A, Subchapter II, Sections 668 a-d.

Federal Water Pollution Control Act (Clean Water Act), 1972[4]

[http://www4.law.cornell.edu/uscode/33/ch26.html]

The Federal Water Pollution Control Act was first passed by Congress in 1948. The Act was later amended and became known as the Clean Water Act. The Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States. It gives the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs, including setting wastewater standards for industry and water quality standards for contaminants in surface waters. The Act makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, without a permit under its provisions. Clean Water Act 404 permits are issued by the U.S. Army Corps of Engineers for dredge/fill activities within wetlands or non-wetland waters of the U.S. Clean Water Act 401 certifications are issued by the Regional Water Quality Control Board for activities requiring a federal permit or license which may result in discharge of pollutants into waters of the U.S.

2.2 State Regulations and Standards

California Environmental Quality Act (CEQA)[5]

[http://ceres.ca.gov/topic/env_law/ceqa/guidelines/]

The California Environmental Quality Act requires that biological resources be considered when assessing the environmental impacts resulting from proposed actions. CEQA does not specifically define what constitutes an "adverse effect" on a biological resource. Instead, lead agencies are charged with determining what specifically should be considered an impact.

California Fish and Game Code

[http://www.leginfo.ca.gov]

The California Fish and Game (CFG) Code regulates the taking or possession of birds, mammals, fish, amphibia and reptiles, as well as natural resources such as wetlands and waters of the state. It includes the California Endangered Species Act (CESA; Sections 2050-2115) and Streambed Alternation Agreement regulations (Section 1600-1616), as well as provisions for legal hunting and fishing, and tribal agreements for activities involving take of native wildlife.

California Endangered Species Act[6]

[http://www.leginfo.ca.gov]

The California Endangered Species Act (CESA) generally parallels the main provisions of the Federal Endangered Species Act (ESA) and is administered by the California Department of Fish and Game (CDFG). The CESA prohibits take of any species that the California Fish and Game Commission determines to be a threatened or endangered species. CESA allows for take incidental to otherwise lawful development projects upon approval from CDFG. Under the California Fish and Game Code, "take"

[4] U.S.C Title 33, Ch.26, Sub-Ch.I-VI.
[5] PRC, § 21000 et. seq. and the State CEQA Guidelines, CCR, §15000 et seq.
[6] California Fish and Game Code, Division 3, Chapter 1.5, Sections 2050-2115.

is defined as to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.

Porter-Cologne Water Quality Control Act[7]
[http://www.leginfo.ca.gov]
This Act provides for statewide coordination of water quality regulations. The Act established the California State Water Resources Control Board as the statewide authority and nine separate Regional Water Quality Control Boards to oversee water quality on a day-to-day basis at the regional/local level.

Natural Community Conservation Planning (NCCP) Act of 1991[8]
[http://www.dfg.ca.gov/nccp/displaycode.html].
The NCCP Act is designed to conserve natural communities at the ecosystem scale while accommodating compatible land use. The California Department of Fish and Game is the principal state agency implementing the NCCP Program. NCCP Plans developed in accordance with the Act provide for comprehensive management and conservation of multiple wildlife species and identify and provide for the regional or area-wide protection and perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth.

2.3 Local Regulations and Standards

San Diego County General Plan – Open Space Element (Part I), Conservation Element (Part X), and Community and Subregional Plans
[http://www.co.san-diego.ca.us/cnty/cntydepts/landuse/planning/zoning/]
The Open Space Element and the Conservation Element of the General Plan provide guiding principles for the conservation of biological resources. The Open Space Element outlines the goals and policies pertaining to each type of open space, not all of which are for the preservation of biological resources. The Conservation Element, specifically Chapters 3 and 4 address County policies relating to water, vegetation and wildlife habitat. Appendix K of the Conservation Element outlines the County's Resource Conservation Areas (RCA), which are further described and delineated in each of the Community and Subregional Plans. Each RCA has been designated as such for a purpose specific to that area. When a site is located within a mapped RCA, the project must comply with the relevant policies for that RCA (i.e., avoidance of oaks, etc.).

County of San Diego Zoning Ordinance
http://www.co.san-diego.ca.us/cnty/cntydepts/ landuse/planning/zoning/]
Land may also have a zoning designation or Special Area Regulation with certain restrictions pursuant to the Zoning Ordinance. For instance, lands may have a zoning designation of S81 Ecological Resource Area Regulations. The few uses allowed on lands with this designation are subject to strict provisions and limitations. The Zoning Ordinance also applies other Special Area Regulations with specific restrictions and

[7] California Water Code, Division 7, Sections 13000-14958.
[8] Section 2800 et. seq. of the California Fish and Game Code, as amended January 1, 2003 (Chapter 4, sections 1 and 2 of California statutes 2002.

provisions, including designator G (Sensitive Resource), R (Coastal Resource Protection Area) and/or V (Vernal Pool Area).

Multiple Species Conservation Program and Biological Mitigation Ordinance[9]
[http://www.sdcounty.ca.gov]
The MSCP is a long-term regional conservation plan designed to establish a connected preserve system that protects the County's sensitive species and habitats. The MSCP covers 582,243 acres over 12 jurisdictions. Each jurisdiction will have their own subarea plan to be implemented separately from one another. The subarea plan for the County's jurisdiction covers 252,132 acres in the southwestern portion of the unincorporated lands. The County Subarea Plan is regulated by the Biological Mitigation Ordinance, which outlines the specific criteria and requirements for projects within the MSCP boundaries. The County Subarea Plan (adopted October 1997), the BMO (adopted March 1998), the Final MSCP Plan (dated August 1998) and the Implementation Agreement (signed March 1998) between the County and Wildlife Agencies are the documents used to implement the MSCP.

The MSCP and BMO provide specific criteria for project design, impact allowances and mitigation requirements. The criteria contained within this document do not replace those required by the MSCP. All projects within the MSCP boundaries must conform to both the MSCP requirements and the County's policies under CEQA.

Resource Protection Ordinance[10]
[http://www.sdcounty.ca.gov]
The Resource Protection Ordinance (RPO) was adopted in 1989 and later amended in 1991. RPO restricts to varying degrees impacts to various natural resources including wetlands, wetland buffers, floodplains, steep slopes, sensitive habitat lands and historical sites. Certain permit types are subject to the requirement to prepare Resource Protection Studies under the RPO.

RPO states that no impacts may occur to lands determined to be wetlands as defined by the ordinance, except those impacts related to aquaculture, scientific research and/or wetland restoration projects. In addition, the ordinance requires that a wetland buffer be provided to further protect the wetland resources. Access paths, improvements necessary to protect the adjacent wetlands and those uses allowed within the actual wetland are the only allowed uses within the buffer. No impacts caused by activities other than these specifically mentioned shall be allowed. For more explicit information on these requirements refer to RPO.

RPO also limits impacts to sensitive habitat lands. Sensitive habitat lands include unique vegetation communities and/or the habitat that is either necessary to support a viable population of sensitive species, is critical to the proper functioning of a balanced

[9] County of San Diego, Multiple Species Conservation Program (MSCP), County of San Diego Subarea Plan, 1997 and County of San Diego, Biological Mitigation Ordinance, (Ord. Nos. 8845, 9246) 1998 (new series).
[10] County of San Diego, Resource Protection Ordinance, 1991 (Ord. Nos. 7968, 7739, 7685 and 7631).

natural ecosystem or which serves as a functioning wildlife corridor. Impacts shall only be allowed when: (1) all feasible measures have been applied to reduce impacts; and (2) mitigation provides an equal or greater benefit to the affected species.

The ordinance includes the provision that when "the extent of environmentally sensitive lands on a particular legal lot is such that no reasonable economic use of such lot would be permitted by these regulations, then an encroachment into such environmentally sensitive lands to the minimum extent necessary to provide for such reasonable use may be allowed".

Habitat Loss Permit Ordinance[11]
[www.amlegal.com]
The Habitat Loss Permit (HLP) Ordinance was adopted in March of 1994 in response to both the listing of the California gnatcatcher, as a Federally threatened species, and the adoption of the Natural Communities Conservation Plan (NCCP) by the State of California. Pursuant to the Special 4(d) Rule under the ESA, the County is authorized to issue "take permits" for the California gnatcatcher (in the form of Habitat Loss Permits) in lieu of Section 7 or 10(a) Permits typically required from the US Fish and Wildlife Service. Although issued by the County, the wildlife agencies must concur with the issuance of a HLP for it to become valid as take authorization under the ESA.

The HLP Ordinance states that projects must obtain a Habitat Loss Permit prior to the issuance of a grading permit, clearing permit or improvement plan if the project will directly or indirectly impact any of several coastal sage scrub (CSS) habitat types. The Ordinance requires an HLP if CSS or related habitat will be impacted, regardless of whether the site is currently occupied by gnatcatchers. HLPs are not required for projects within the boundaries of the Multiple Species Conservation Program since take authorization is conveyed to those projects through compliance with the MSCP. HLPs are also not required for projects that have separately obtained Section 7 or 10(a) permits for take of the gnatcatcher. For more explicit information on these requirements refer to the HLP Ordinance.

[11] County of San Diego, An Ordinance Amending the San Diego County Code to Establish a Process for Issuance of the Coastal Sage Scrub Habitat Loss Permits and Declaring the Urgency Thereof to Take Effect Immediately, Ordinance No. 8365. 1994, Title 8, Div 6, Ch. 1. Sections 86.101-86.105, 87.202.2.

3.0 TYPICAL ADVERSE EFFECTS

Any action that results in the loss or degradation of a biological resource is considered an adverse effect. The most obvious adverse effect is the direct removal of a resource, such as clearing of habitat or the take of a species. Although not as apparent, indirect impacts can be as harmful as direct impacts. In fact, indirect impacts can adversely affect species or habitat to the extent that it is effectively equivalent to removing the resource.

Significant adverse effects may result from one or more direct, indirect and/or cumulative impacts (CEQA Sections 15358 and 15355). The following describes each of these types of impacts relative to biological resources:

3.1 Direct Impacts

Direct impacts are those that are generally obvious, absolute or quantifiable. The removal of habitat from grading or clearing is the most common direct impact. Other examples of direct impacts would include the construction of a substantial barrier in a wildlife corridor (the direct impact being to wildlife movement) or the loss of habitat occupied by a certain species (the direct impact being to that particular species). Direct impacts may occur through the project itself or actions necessary to implement the project (e.g., construction staging areas).

3.2 Indirect Impacts

Indirect impacts may be the result of secondary effects from direct impacts or those impacts that over time cause the degradation of a resource by changing its function, health or quality. Unlike direct impacts which are typically one-time effects, indirect impacts often continue in the long term and may actually increase.

Indirect impacts commonly result from a project's "edge effects." Edge effects from development may extend several hundred feet into adjacent open space areas, causing significant changes in species composition, diversity and abundance in those nearby lands. Projects can have a wide variety of indirect impacts depending on the nature of the project, the type of resources present, and the type and degree of edge effects.

Projects can also cause a decline in the availability of a resource, such as water or prey, or change the habitat viability by altering the moisture regime or vegetation present, thereby adversely affecting a biological resource. Projects may cause habitat fragmentation, loss of ecosystem and watershed integrity, and may affect ecosystems and natural systems through changes in the pattern of land use, and population density or growth rate. Indirect impacts have been addressed in multiple species recovery plans, reports, journal articles and conferences. These Guidelines were created based on the best available science and most common standards followed by the wildlife agencies, conservationists and biologists. On a case-by-case basis, other measurable standards may apply.

3.3 Cumulative Impacts

Cumulative impacts are those caused by the additive effect of multiple direct and indirect impacts to a biological resource over time. A project's direct and indirect impacts may not be individually significant, but the additive effect when viewed in connection with the impacts of past projects, present and probable future projects may cause the significant loss or degradation of a resource. For instance, a creek may be impacted directly and indirectly from road crossings, buffer encroachment and edge effects, all of which cumulatively cause the overall degradation of the creek.

A project may have significant cumulative effects notwithstanding the project's conformance with a regulatory program or existing mitigation plan such as a Habitat Conservation Plan (HCP) or Natural Communities Conservation Plan (NCCP). For example, species may become listed that were not addressed in the adopted plan, or insufficient information was available at the time of plan adoption.

3.4 Permanent and Temporary Impacts

Direct, indirect, and cumulative impacts can be described in more detail relative to whether they are permanent or temporary. Permanent impacts to biological resources would result from a permanent direct loss of those resources as an area is converted to another condition (e.g., developed, ornamental landscaping, agriculture, etc.), or an indirect impact (e.g., edge effects) that will persist and is permanent.

Direct impacts may be considered temporary when an area could be restored to its pre-impact condition thus providing habitat and wildlife functions and values effectively equal to the functions and values that existed before the area was impacted.

4.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

This section provides guidance for evaluating adverse environmental effects a project may have on biological resources. These Guidelines are organized into five subject areas, based on the State CEQA Guidelines. There may be some types of impacts that need to be evaluated under more than one subject area.

These Guidelines were established using a variety of resources. Some are the result of an extensive literature search covering scientific texts, journal articles, regional studies and regulatory documents. Others were developed during the creation of the MSCP based on modeling and species analysis. In the event that there was no conclusive scientific data to support a specific Guideline, such Guidelines have not been included. Best available science was used in establishing these Guidelines, but the Guidelines will be modified when scientific evidence to support a new Guideline becomes available. Any person may provide suitable scientific evidence for consideration in modifying the standards presented in this section and the information shall be considered and applied, as approved by the County. Additional site-specific Guidelines may be applied where relevant circumstances dictate as approved by the County. Please note that due to the

extensive list of references and multiple sources for each Guideline, all references are listed at the end of this document.

It is important to note that quantification standards are provided as a guidance tool only and specific conditions may vary based on specific site conditions and/or circumstances as well as the best available scientific information regarding a species' biology. Values are provided as a tool for assessing the need to consider the potential for a significant effect to exist and the requirement to specifically address the issues raised in this section.

Before a determination of the significance of an impact can be made, the presence, nature and extent of the biological resources must be established per the County's Biological Survey, Report Format, Content and Mapping Requirements.

An affirmative response to or confirmation of any one of the following Guidelines will generally be considered a significant impact related to biology as a result of project implementation, in the absence of scientific evidence to the contrary:

4.1 Special Status Species

Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

The following information should be evaluated to provide evidence to support a conclusion of impact significance.

A. The project would impact one or more individuals of a species listed as federally or state endangered or threatened. [12]
B. The project would impact the regional long-term survival of a County Group A or B plant species, or a County Group I animal species, or a species listed as a state Species of Special Concern. Impacts of less than 5 percent of an existing population (as defined by this document) could only be considered less than significant if a biologically-based determination can be made that the project would not have a substantial adverse effect on the regional long-term survival of that plant or animal. Impacts to 5 percent or more of the population are generally considered significant.[13]

[12] Significance guideline 4.1.A. Impacts to federally and/or state listed species are always considered significant.

[13] Significance guidelines 4.1.B, 4.1.C. The County has divided sensitive species into groups based on their rarity and known threats. Plant species are divided into Groups A through D on the County Rare Plant List (Table 2). Animals are divided into Groups I and II on the Sensitive Animal List (Table 3). Groups A and B Plants and Group I Animals include those that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met. Groups C and D Plants and Group II Animals include those species that are becoming less common, but are not yet so rare that extirpation or extinction is imminent without

C. The project would impact the regional long-term survival of a County Group C or D plant species or a County Group II animal species.
D. The project may impact arroyo toad aestivation or breeding habitat. Any alteration of suitable habitat within 1 kilometer (3,280 feet) in any direction of occupied breeding habitat (unless very steep slopes or other barriers constrain movement) could only be considered less than significant if a biologically-based determination can be made that the project would not impact the aestivation or breeding behavior of arroyo toads.[14]
E. The project would impact golden eagle habitat. Any alteration of habitat within 4,000 feet of an active golden eagle nest could only be considered less than significant if a biologically-based determination can be made that the project would not have a substantially adverse effect on the long-term survival of the identified pair of golden eagles.[15]
F. The project would result in a loss of functional foraging habitat for raptors. Alteration of less than 5 acres of foraging habitat could only be considered less than significant if a biologically-based determination can be made that the project would not have a substantially adverse effect on the regional long term survival of any raptor species.
G. The project would increase noise and/or nighttime lighting to a level above ambient proven to adversely affect sensitive species.[16]
H. The project would impact the viability of a core wildlife area, defined as a large block of habitat (typically 500 acres or more not limited to project boundaries, though smaller areas with particularly valuable resources may also be considered a core wildlife area) that supports a viable population of a sensitive wildlife species or an area that supports multiple wildlife species. Alteration of

immediate action. These species tend to be prolific within their suitable habitat types. The term "regional" is defined as within San Diego County.

[14] Significance guideline 4.1.D. Arroyo toads breed in wetland areas, but require upland habitats for aestivation (similar to hibernation). Studies have shown that arroyo toads will travel up to 1 kilometer (0.62 miles) from wetlands, but there is no definitive study to show the absolute minimum distance that arroyo toads require for all of their life history needs. The USFWS model used to identify and map areas essential to this species determined that areas up to 25m (80 feet) in elevation above the stream channel were most likely to contain the primary constituent upland habitat elements essential to the species. Until such time that a more definitive study is completed, the County will use a width and elevation most often used by the wildlife agencies and amphibian experts.

[15] Significance guideline 4.1.E. Only a limited number of active golden eagle nests remain in San Diego County. This guideline applies a 4000-foot no-disturbance zone around golden eagle nests. If the project proposes a use that will have little to no long-term effects, such as the construction of a wireless telecommunications facility or improvements to an existing road, the project may proceed with appropriate mitigation during the non-breeding season without having significant effects. Long-term uses within the 4000-foot zone, including most development and recreational uses, are considered significant impacts to golden eagles even if the initial grading, clearing and construction were completed outside of the breeding season. The analysis completed during the creation of the MSCP found the 4000-foot no-disturbance to be necessary for the long-term viability of the existing active nests. Given the lack of any contrary scientific evidence, the County will also use the 4000 zone criteria outside of the MSCP.

[16] Significance guideline 4.1.G. Some studies such as the Bioacoustics Research Team (1997) concluded that 60dBA is a single, simple criterion to use as a starting point for passerine impacts until more specific research is done. Factors that may be considered include, but are not limited to, song and noise frequencies and levels and temporal shifts (time of day, steady vs. intermittent, etc.) for the sensitive species.

any portion of a core habitat could only be considered less than significant if a biologically-based determination can be made that the project would not have a substantially adverse effect on the core area and the species it supports.

I. The project would increase human access or predation or competition from domestic animals, pests or exotic species to levels that would adversely affect sensitive species.

J. The project would impact nesting success of the following sensitive animals through grading, clearing, fire fuel modification, and/or other noise generating activities such as construction. Alteration of habitat during breeding seasons could only be considered less than significant if a biologically-based determination can be made that the project would not have a measured adverse effect on the regional long-term survival of the specified species:[17]

*Species**	*Breeding Season*
Coastal cactus wren	*February 15 to August 15*
*Coastal California gnatcatcher**	*February 15 to August 31*
Least Bell's vireo	*March 15 to September 15*
Southwestern willow flycatcher	*May 1 to September 1*
Tree-nesting raptors	*January 15 to July 15*
Ground-nesting raptors	*February 1 to July 15*
Golden eagle	*January 1 to July 31*
*Light-footed clapper rail***	*February 15 to September 30*

**The breeding seasons listed in this table do not supersede implementing agreements with the wildlife agencies, Habitat Conservation Plans (HCPs), Habitat/Resource Management Plans (HMPs/RMPs), and Special Area Management Plans (SAMPs). For example, inside the MSCP Subarea Plan, the gnatcatcher breeding season is March 1 to August 15.*

*** The light-footed clapper rail is a CDFG fully-protected species and the CDFG does not allow "take" under the Fish and Game Code.*

4.2 Riparian Habitat or Sensitive Natural Community

Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

The following information should be evaluated to provide evidence to support a conclusion of impact significance.

A. Project-related construction, grading, clearing, construction or other activities would temporarily or permanently remove sensitive native or naturalized habitat (as listed in Table 5, excluding those without a mitigation ratio) on or off the project site. This Guideline would not apply to small remnant pockets of habitat

[17] Significance guideline 4.1.J. This guideline addresses the potential loss of offspring for particularly sensitive birds. Any direct or indirect impacts that might affect the nesting success of these species would be significant. The dates used are based on the collective information gathered from various studies completed on the birds of San Diego County.

that have a demonstrated limited biological value. No *de minimus* standard is specified under which an impact would not be significant, however; minor impacts to native or naturalized habitat that is providing essentially no biological habitat or wildlife value can be evaluated on a case-by-case basis to determine whether the projected impact may be less than significant. For example, an impact to native or naturalized upland habitat under 0.1 acre in an existing urban setting may be considered less than significant (depending on a number of factors). An evaluation of this type should consider factors including, but not limited to, type of habitat, relative presence of habitat type in project vicinity, its condition and size, presence or potential for sensitive species, relative connectivity with other native habitat, wildlife species and activity in project vicinity, and current degree of urbanization and edge effects in project vicinity, etc. Just because a particular habitat area is isolated, for example, does not necessarily mean that impacts to the area would not be significant (e.g. vernal pools). An area that is disturbed or partially developed may provide a habitat "island" that would serve as a functional refuge area "stepping stone" or "archipelago" for migratory species.

B. Any of the following will occur to or within jurisdictional wetlands and/or riparian habitats as defined by ACOE, CDFG and the County of San Diego: removal of vegetation; grading; obstruction or diversion of water flow; adverse change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause an adverse change in native species composition, diversity and abundance.
C. The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels.[18]
D. The project would increase human access or competition from domestic animals, pests or exotic species to levels proven to adversely affect sensitive habitats.[2]
E. The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands. Generally, the County considers that buffers of a minimum of 25 feet and a maximum of 200 feet are necessary to protect wetlands.[19] Buffers of less than 25 feet could only be considered less than significant if a biologically-based determination can be made that the reduced buffer would not have a substantially adverse effect on the functions and values of the wetlands.

[18] Significance guideline 4.2.C. Studies have found that groundwater reductions adversely affect native plant species. Two of the referenced studies (Integrated Urban Forestry, 2001 and Committee on Riparian Zone Functioning and Strategies for Management et. al, 2002) found that permanent reduction in groundwater elevation levels of greater than three feet is enough to induce water stress in some riparian trees, particularly willow (*Salix* spp.), cottonwood (*Populus* spp.) and *Baccharis* species.
[19] Significance guideline 4.2.E. Wetland crossings by their nature will not have a wetland buffer.

The following examples provide guidance on determining appropriate buffer widths.[20]

- A 25-foot wetland buffer would only be appropriate under a situation such as the following: The wetland has been assessed to have low physical and chemical functions, vegetation is not dominated by hydrophytes, soils are not highly erosive, slopes do not exceed 25%, and the wetland is not essential or integral in maintenance of local ecological values.
- A wetland buffer of 50-100 feet would be appropriate for moderate to high quality wetlands which support a predominance of hydrophytic vegetation or wetlands within steep slope areas (greater than 25%) with highly erosive soils. Within the 50-100-foot range, wider buffers are appropriate where wetlands connect upstream and downstream, where the wetlands serve as a local wildlife corridor, or where the adjacent land use(s) would result in substantial edge effects that could not be mitigated.
- Wetland buffers of greater than 100 feet to 200 feet or more are appropriate for wetlands within regional wildlife corridors or wetlands that support significant populations of wetland-associated sensitive species or where stream meander, erosion, or other physical factors indicate a wider buffer is necessary to preserve wildlife habitat.
- Buffering of greater than 200 feet may be necessary when a wetland is within a regional corridor or supports significant populations of wetland-associated sensitive species and lies adjacent to land use(s) which could result in a high degree of edge effects within the buffer.

4.3 Federal Wetlands

Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?

This Guideline refers only to federally protected wetlands. The significance of impacts shall be determined under Guideline 4.2.B, C, and E.

[20] Significance guidelines 4.2.E, 4.5 C. The Resource Protection Ordinance substantially limits activities that may occur in wetlands and wetland buffers as defined by the Ordinance. The Ordinance requires wetland buffers of an appropriate size to protect the wetlands environmental and functional habitat values. The Ordinance prohibits impacts to sensitive habitat lands, although it allows development within sensitive habitat lands when the project includes mitigation that provides an equal or greater benefit to the affected species.

4.4 Wildlife Movement and Nursery Sites

Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The following information should be evaluated to provide evidence to support a conclusion of impact significance.

A. The project would prevent wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction.
B. The project would substantially interfere with connectivity between blocks of habitat, or would potentially block or substantially interfere with a local or regional wildlife corridor or linkage. For example, if the project proposes roads that cross corridors, fencing that channels wildlife to underpasses located away from interchanges will be required to provide connectivity. Wildlife underpasses shall have dimensions (length, width, height) suitable for passage by the affected species based on a site-specific analysis of wildlife movement.[8]
C. The project would create artificial wildlife corridors that do not follow natural movement patterns. For example, constraining a corridor for mule deer or mountain lion to an area that is not well-vegetated or that runs along the face of a steep slope instead of through the valley or along the ridgeline.[8]
D. The project would increase noise and/or nighttime lighting in a wildlife corridor or linkage to levels proven to affect the behavior of the animals identified in a site-specific analysis of wildlife movement.[21]
E. The project does not maintain an adequate width for an existing wildlife corridor or linkage and/or would further constrain an already narrow corridor through activities such as (but not limited to) reduction of corridor width, removal of available vegetative cover, placement of incompatible uses adjacent to it, and placement of barriers in the movement path. The adequacy of the width shall be based on the biological information for the target species, the quality of the habitat within and adjacent to the corridor, topography and adjacent land uses. Where there is limited topographic relief, the corridor should be well-vegetated and adequately buffered from adjacent development. Corridors for bobcats, deer and other large animals should reach rim-to-rim along drainages.[8]

[21] Significance guidelines 4.4.B, 4.4.C, 4.4.D, 4.4.E, 4.4.F. Wildlife movement paths have a critical role in species survival, allowing foraging, juvenile dispersal, genetic flow, migration and colonization. Without these ecological processes, the probability of species extirpation and eventually extinction is significantly greater. Because of their importance, movement paths have received substantial attention in conservation biology literature. Unfortunately, no study has or can conclude the universal minimum standards for maintaining a movement path because of inherent variability in biological resources. Instead, the optimal conditions for individual movement paths is be based on site-specific factors, such as the function of the movement path (i.e., as either a regional linkage or a local movement corridor), the needs of the specific species that utilize the path and the type and quality of habitat present. The criterion set forth in these guidelines relies on site-specific factors while following the guiding principles that have been established through the numerous studies on wildlife movement paths.

F. The project does not maintain adequate visual continuity (i.e., long lines-of-site) within wildlife corridors or linkage. For example, development (such as homes or structures) sited along the rim of a corridor could present a visual barrier to wildlife movement. For stepping-stone/archipelago corridors, a project does not maintain visual continuity between habitat patches.[8]

4.5 Local Policies, Ordinances, Adopted Plans

Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?

The following information should be evaluated to provide evidence to support a conclusion of impact significance.

A. For lands outside of the MSCP, the project would impact coastal sage scrub (CSS) vegetation in excess of the County's 5% habitat loss threshold as defined by the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines.[22]
B. The project would preclude or prevent the preparation of the subregional Natural Communities Conservation Planning Process (NCCP). For example, the project proposes development within areas that have been identified by the County or resource agencies as critical to future habitat preserves.[9]
C. The project will impact any amount of sensitive habitat lands as outlined in the Resource Protection Ordinance (RPO).[7]
D. The project would not minimize and/or mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the Natural Communities Conservation Planning Process (NCCP) Guidelines.[9]
E. The project does not conform to the goals and requirements as outlined in any applicable Habitat Conservation Plan (HCP), Habitat Management Plan (HMP), Special Area Management Plan (SAMP), Watershed Plan, or similar regional planning effort.
F. For lands within the Multiple Species Conservation Program (MSCP), the project would not minimize impacts to Biological Resource Core Areas (BRCAs), as defined in the Biological Mitigation Ordinance (BMO).[23]
G. The project would preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines.[9]

[22] Significance guidelines 4.5.A, 4.5.B, 4.5.D, 4.5.G, 4.5.J. Projects must conform to the specific requirements of the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines and the San Diego County Habitat Loss Permit (HLP) Ordinance. These guidelines relate to specific findings required for all projects outside of the MSCP boundaries.

[23] Significance guidelines 4.5.F, 4.5.H, 4.5.I. Projects must conform to the specific requirements of the Multiple Species Conservation Program (MSCP) and the Biological Mitigation Ordinance (BMO). These guidelines relate to specific findings required for all projects within the MSCP boundaries.

H. The project does not maintain existing movement corridors and/or habitat linkages as defined by the Biological Mitigation Ordinance (BMO).[10]
I. The project does not avoid impacts to MSCP narrow endemic species and would impact core populations of narrow endemics.[10]
J. The project would reduce the likelihood of survival and recovery of listed species in the wild.[9]
K. The project would result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (Migratory Bird Treaty Act).
L. The project would result in the take of eagles, eagle eggs or any part of an eagle (Bald and Golden Eagle Protection Act).

4.6 Cumulative Impacts

Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal species?

Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

The whole of the proposed action must be evaluated to determine if there will be significant cumulative impacts. Cumulative issues to consider include the applicability of a regional plan (such as MSCP and NCCP) and a list of past, present and future projects in the area. If relying on a project's conformance with a regulatory program or existing mitigation plan such as an HCP or NCCP as evidence that cumulative impacts will be less than significant, additional language should be included to substantiate the decision that the project has no cumulatively considerable impacts beyond the existence of the HCP or NCCP.

5.0 STANDARD MITIGATION MEASURES AND PROJECT DESIGN CONSIDERATIONS

When it has been established that a significant impact will potentially occur, the project must propose mitigation to lessen or compensate for the impact. As defined by CEQA (Section 15370), mitigation includes either measures to avoid, minimize or rectify impacts or measures that compensate for impacts by adequately replacing or providing substitute resources. Table 1 provides a grouping of some applicable mitigation measures that can be utilized to address the Significance Guidelines.

Project design is critically important for the protection of biological resources. Unless projects are designed appropriately, resources cannot be protected in a manner that will ensure long-term viability. Detailed discussion regarding project design is included in Attachment B.

Table 1

Typical Mitigation Measures and Conditions

Typical Mitigation Applied to Reduce Effects Below Significance
Biological Open Space/Conservation Easement or Fee Title Transfer of Open Space
Limited Building Zone Easement
Off-site Purchase or Preservation of Habitat
Revegetation Plans
Salvage of Root Stock, Seed or Specimen Collection
Revegetation and/or enhancement of Open Space
Resource Management Plans (RMP) *(formerly known as Habitat Management Plans or HMPs*)
Breeding Season Avoidance
Permanent Signs
Permanent Fencing or Walls
Temporary Fencing
Evidence of Federal or State permits
Restrictions on Lighting, Runoff, Access, and/or Noise
Biological Monitoring

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Attachment A

DEFINITIONS

Core Wildlife Area. A large block of habitat that supports a source population of a sensitive wildlife species or multiple wildlife species. Core wildlife areas are typically 500 acres or more (not limited to project boundaries), though smaller areas with particularly valuable resources may also be considered a core wildlife area.

Corridor. A specific route that is used for movement and migration of species. A corridor may be different from a "Linkage" because it represents a smaller or more narrow avenue for movement.

Impact Neutral. An area not considered impacted, but cannot be credited toward mitigation requirements. For example, wetlands and wetland buffers that are avoided to comply with the Resource Protection Ordinance are impact neutral. Large lot subdivisions may designate impact neutral areas as described in the Biological Report Format, section *4.2*, Analysis of Project Effects.

Linkage. An area of land which supports or contributes to the long-term movement of wildlife and genetic exchange by providing live-in habitat that connects to other habitat areas.

Narrow Endemic Species. As defined in the Biological Mitigation Ordinance, those plant species listed on Attachment E of document No. 0769999 on file with the Clerk of the Board.

Native Wildlife Nursery Sites. Sites where wildlife concentrate for hatching and/or raising young, such as rookeries, spawning areas and bat colonies.

Population. An interbreeding group of individuals of the same species. The geographical limits of a population should be delineated as most appropriate for that species depending on its mobility, method of reproduction, and known distribution. Proportions of a population shall generally be determined based on the number of individuals; however, area may be appropriate for some species.

Raptor. Birds of prey such as eagles, hawks, falcons and owls.

Raptor Foraging Habitat. Land that is a minimum of 5 acres (not limited to project boundaries) of fallow or open areas with any evidence of foraging potential (i.e., burrows, raptor nests, etc.).

Sensitive Habitat. Land which supports unique vegetation communities, or the habitats of rare or endangered species or sub-species of animals or plants as defined by Section 15380 of the State California Environmental Quality Act (CEQA) Guidelines (14 Cal. Admin. Code Section 15000 et seq.). Sensitive Habitat includes the area which is

necessary to support a viable population of any of the above species in perpetuity, or which is critical to the proper functioning of a balanced natural ecosystem or which serves as a functioning wildlife corridor.

Sensitive Plant. Those plants which meet the following criteria as determined by the County and maintained in its list of Sensitive Plant Species:

- Group A = Plants that are rare, threatened or endangered in California and elsewhere; or
- Group B = Plants that are rare, threatened or endangered in California but more common elsewhere; or
- Group C = Plants which may be quite rare, but need more information to determine their true rarity status; or
- Group D = Plants of limited distribution and are uncommon, but not presently rare or endangered.

Sensitive Species.

- Those species that are included on generally accepted and documented lists of plants and animals of Endangered, threatened, candidate or of special concern by the Federal Government or State of California;
- MSCP Rare, Narrow Endemic Animal Species, Narrow Endemic Plant Species, and County Sensitive Plant and Animal Species.
- Those species that meet the definition of "Rare or Endangered Species" under Section 15380 of the State CEQA Guidelines.

Attachment B

PROJECT DESIGN CONSIDERATIONS

Project design is critically important for the protection of biological resources. Unless projects are designed appropriately, resources cannot be protected in a manner that will ensure long-term viability. Therefore, the type and location of projects should always be designed with the needs of biological resources in mind.

The project should first be reviewed to determine whether on-site open space is needed. **On-site open space should only be included in one of the following instances:**

- **A site hosts *high to very high* value or irreplaceable biological resources; or**
- **A site hosts *moderate* value biological resources and site-specific factors dictate that on-site mitigation would be biologically-viable; or**
- **A site hosts *low* value habitat but is part of a larger habitat complex that is biologically-viable.**

Sites that do not meet the examples above shall provide any necessary mitigation off-site.

If it is determined that on-site open space should be included, the optimal size, shape and location of open space should become a primary consideration when designing a project.

To determine the value of a site's biological resources, the following attributes should be considered:

- The sensitivity of the vegetation type;
- Extent of on and off-site habitat connectivity;
- General quality of the habitat as determined by the level of disturbance, range in vegetative structure and species diversity;
- Sensitivity of species present;
- Importance of its biological function, such as being part of a wildlife corridor, functioning as a buffer or being integral to a watershed;
- Physical characteristics, such as topography and soils.
- Whether the site has been identified as or adjacent to a pre-approved mitigation area (PAMA) or proposed PAMA.

Basic Principles

The following basic principles should be followed when designing a project that includes on-site open space:

- ❖ In all cases, projects should be designed to minimize impacts to the more sensitive resources and completely avoid and buffer those that are very rare or unique.

- ❖ Although the overall size of an open space area is important, long-term viability of the resources depends on other factors as well. Site conditions and project-specific details should be considered, including:

    - The function and value of the habitat (i.e., as a remnant for stepping-stone / archipelago-dependent behavior, etc.);
    - The type of habitat present and any design requirements (i.e., a vernal pool has a watershed, oak woodlands and wetlands need a buffer to protect their root systems, etc.);
    - Whether wildlife utilize portions of the site for movement (on any scale);
    - The types of species utilizing the site for nesting, foraging, movement, etc;
    - The nature and scale of the project proposed (for instance, an industrial project will require far different considerations than a subdivision with 20-acre lots);
    - Fire fuel modification and vegetation management requirements for existing and proposed structures and roads.

- ❖ Large blocks of habitat are generally better than smaller ones. However, when no alternative exists, there are cases when a small patch of habitat is useful as a stepping-stone through a developed landscape; although, this is only functional for a limited number of avian species.

- ❖ The shape of open space in relation to development is often as important as size. The intent of any project design should be to create the maximum amount of interior open space with the lowest amount of interface between development and preserved areas – referred to as maximizing the surface area to perimeter ratio. Less perimeter translates to less potential for "edge effects" to degrade the open space.

- ❖ The shape, size and location of open space should all be planned to create the maximum amount of habitat connectivity between on and off-site areas. Habitat connectivity allows for more wildlife movement and maximizes the amount of resources available to resident wildlife (for nesting, foraging, etc.).

- ❖ To maintain the ecosystem as a functioning unit, the open space should be located such that it encompasses the natural diversity of type, function and structure of habitats. Natural patterns of habitat associations should also be preserved. For instance, wetlands and their adjacent upland habitats should be preserved together as should the grasslands or low-lying shrublands adjacent to oak woodland.

- Linkages and corridors are essential for juvenile dispersal, foraging, migration and genetic exchange, all of which are necessary for maintaining healthy populations. The optimal location and dimensions of each linkage and corridor are dependent upon the types of resources present and the specific needs of species that utilize the movement path. Natural movement paths within a larger block of undisturbed habitat should be protected, as should the existing constrained, sometimes tenuous connections that provide the last link between two patches of habitat. Projects should never propose to create a constricted corridor or further constrain an existing one.

- Preserve design may include land subject to past disturbances if the land in its current or restored state would serve a biological function.

Table 2

County of San Diego Sensitive Plant List

LIST A (Plants rare, threatened or endangered in California and elsewhere)

Abronia villosa var. *aurita*, Foothill sand-verbena -- chaparral and CSS, sandy
Acanthomintha ilicifolia, San Diego thornmint [FT][CE][MSCP narrow endemic] -- vernal pools, grassy areas, chaparral and CSS, clay and gabbro soils
Ambrosia pumila, San Diego ambrosia [FE][MSCP narrow endemic] -- chaparral, CSS, grasslands, and valley bottoms, often in disturbed areas
Aphanisma blitoides, Aphanisma -- coastal bluffs, scrub, and dunes
Arctostaphylos glandulosa ssp. *crassifolia*, Del Mar manzanita [FE] -- maritime chaparral, sandy
Arctostaphylos otayensis, Otay manzanita -- mixed chaparral on gabbro and metavolcanic rock
Arctostaphylos rainbowensis, Rainbow manzanita -- chaparral, north county inland areas
Astragalus deanei, Dean's milkvetch -- CSS and riparian along Sweetwater, Otay and Tijuana Rivers and tributaries
Astragalus douglasii var. *perstrictus*, Jacumba milkvetch -- desert transition in southern part of County
Astragalus magdalenae var. *peirsonii*, Pierson's milkvetch [FE][CE] -- desert dunes
Astragalus oocarpus, San Diego Milkvetch -- Lower mountain slopes
Astragalus pachypus var. *jaegeri*, Jaeger's astragalus -- Near Riverside County border, chaparral, cismontane woodlands, CSS, grasslands, sandy or rocky
Astragalus tener var. *titi*, Coastal dunes milkvetch [CE] -- coastal strand
Atriplex coulteri, Coulter's saltbush -- coastal mesas and Ramona grasslands
Atriplex pacifica, South coast saltbush -- coastal sandy areas
Atriplex parishii, Parish brittlescale -- coastal areas and Ramona grasslands
Atriplex serenana var. *davidsonii*, Davidson's saltscale -- coastal areas
Baccharis vanessae, Encinitas baccharis [FT][CE][MSCP narrow endemic] -- coastal mixed chaparral, cental coast & foothills
Berberis nevinii, Nevin's barberry [FE][CE][MSCP narrow endemic] -- mixed chaparral near Riverside County border, also cismontane woodland, CSS, and riparian scrub, sandy or gravelly
Boechera hirschbergiae (= Arabis h.), Hirshberg's rockcress -- endemic, east of Cuyamaca Lake, on heavy clay overlaid with pebbles
Brodiaea filifolia, Thread-leaved brodiaea [FT][CE][MSCP narrow endemic] -- clay soils and near vernal pools, North County
Brodiaea orcuttii, Orcutt's brodiaea -- vernal pools and foothill springs
Calochortus dunnii, Dunn's mariposa lily [CA rare][MSCP narrow endemic] -- montane and foothill, gabbro and metavolcanic soils
Ceanothus cyaneus, Lakeside ceanothus [MSCP narrow endemic] -- Lakeside, Crest, Alpine chaparral
Centromadia (Hemizonia) pungens ssp. *laevis*, Smooth tarplant -- Fall-flowering in coastal valley bottoms
Centromedia (Hemizonia) parryi ssp. *australis*, Southern tarplant -- Fall-flowering in coastal and interior valley bottoms including Ramona
Chaenactis carphoclina var. *peirsonii*, Peirson's pincushion flower -- desert slopes near Santa Rosa Mountains
Chaenactis glabriuscula var. *orcuttiana*, Orcutt's pincushion -- coastal bluffs and dunes
Chaenactis parishii, Parish's pincushion flower -- peak tops in the mountains, chaparral, rocky
Chamaesyce platysperma, Flat-seeded spurge -- sandy desert scrub
Chorizanthe orcuttiana, Orcutt's chorizanthe [FE][CE] -- sand soils; Point Loma and Encinitas, older records at Torrey Pines State Park
Chorizanthe parryi var. *fernandina*, San Fernando spineflower -- north coastal valleys (old record may have been misidentified)
Chorizanthe polygonoides var. *longispina*, Long-spined spineflower -- clay soils; scattered distribution
Clarkia delicata, Campo clarkia -- central and southern oak woodlands, chaparral

Comarostaphylos diversifolia ssp. *diversifolia*, Summer holly -- coastal and foothill canyons in heavy chaparral
Cordylanthus maritimus ssp. *maritimus*, Salt marsh bird's beak [FE][CE] -- coastal salt marsh
Corethrogyne (Lessingia) filaginifolia var. *linifolia*, San Dieguito sand aster -- north coastal sandy areas
Corethrogyne filaginifolia (=Lessingia f.), San Diego sand aster -- coastal sandy areas
Cryptantha ganderi, Gander's cryptantha -- desert dunes
Cupressus forbesii, Tecate cypress -- Otay, Tecate, and Guatay Mountains
Cupressus stephensonii, Cuyamaca cypress -- west slope of Cuyamaca Peak
Deinandra (Hemizonia) conjugens, Otay tarplant [FT][CE][MSCP narrow endemic] -- grasslands near Otay and Bonita
Deinandra (Hemizonia) floribunda, Tecate tarplant -- Fall-flowering in valleys and arroyos in interior, southern chaparral
Deinandra (Hemizonia) mohavensis, Mojave tarplant [CE] -- drainages in 3,000 ft. elevation chaparral, Chihuahua Valley, Palomar Mtn.
Delphinium hesperium ssp. *cuyamacae*, Cuyamaca larkspur [CA rare] -- montane meadows
Downingia concolor var. *brevior*, Cuyamaca downingia [CE] -- Cuyamaca Lake
Dudleya blochmaniae var. *blochmaniae*, Blochman's dudleya -- MCAS Camp Pendleton clay soils and terraces
Dudleya blochmaniae var. *brevifolia*, Short-leaved dudleya [CE][MSCP narrow endemic] -- sandstone terraces near Torrey Pines and Del Mar
Dudleya multicaulis, Many-stemmed dudleya -- MCAS Camp Pendleton
Dudleya variegata, Variegated dudleya [MSCP narrow endemic] -- coastal mesas, CSS and grasslands on foothill slopes among rocks, especially metavolcanics
Dudleya viscida, Sticky dudleya -- North County coastal canyon slopes
Ericameria cuneata var. *macrocephala*, Laguna Mountain goldenbush -- rocky mountain peaks
Eriogonum foliosum, Leafy buckwheat -- sandy montane desert soils
Eryngium aristulatum var. *parishii*, San Diego button-celery [FE][CE] -- vernal pools
Eryngium pendletonensis, Pendleton button-celery -- MCAS Camp Pendleton; coastal bluffs, grasslands and sparse CSS
Fremontodendron mexicanum, Mexican flannelbush [FE][CA rare] -- metavolcanic canyons on Otay and Jamul Mountains
Galium angustifolium borregoense, Borrego bedstraw [CA rare] -- Palm Canyon
Galium angustifolium ssp. *jacinticum*, San Jacinto Mountains bedstraw -- montane areas
Grindelia hirsutula hallii, Hall's gumplant -- montane grassy and meadow areas
Hazardia orcuttii, Orcutt's hazardia [CT] -- CSS in Encinitas
Heuchera brevistaminea, Mt. Laguna alumroot -- rocky mountain cliff slopes
Horkelia cuneata ssp. *puberula*, Mesa horkelia -- chaparral, CSS, cismontane woodland, sandy, gravelly
Horkelia truncata, Ramona horkelia -- gabbro and metavolcanic foothill slopes and peaks
Hulsea californica, San Diego sunflower -- chaparral slopes in montane areas
Isocoma menziesii var. *decumbens*, Decumbent goldenbush -- CSS
Lasthenia glabrata ssp. *coulteri*, Coulter's goldfields -- coastal saltmarsh
Lepechinia ganderi, Gander's pitcher sage [MSCP narrow endemic] -- metavolcanic soils, Otay and San Miguel Mountains
Lepechinia cardiophylla, Heart-leaved pitcher sage [MSCP narrow endemic] -- metavolcanic soils near Mt. Woodson
Lepidium flavum var. *felipense*, Borrego pepper-grass -- dry lake bottom, Little Blaire Valley
Lepidium virginicum var. *robinsonii*, Robinson pepper-grass -- CSS and grassy areas
Lessingia glandulifera var. *tomentosa*, Warner Springs lessingia -- valleys near Warner Springs; chaparral, sandy
Lilium parryi, Lemon lily -- moist montane meadows
Limnanthes gracilis ssp. *parishii*, Cuyamaca meadowfoam [CE] -- montane meadows
Linanthus floribundus ssp. *hallii*, Santa Rosa Mtn. linanthus -- Santa Rosa Mountains
Linanthus orcuttii, Orcutt's linanthus -- montane forest openings
Lotus crassifolius var. *otayensis*, Otay Mountain lotus -- top of Otay Mountain
Lotus haydonii, Pygmy lotus -- desert canyons, pinyon juniper, rocky

Lotus nutallianus, Nuttall's lotus -- south coastal strand and sandy soils
Lupinus excubitus var. *medius*, Mtn. Springs bush lupine -- eastern edge of County near I-8
Malacothamnus aboriginum, Indian Valley bush mallow -- montane chaparral
Mimulus latidens, Vernal pool monkeyflower -- vernal pools
Monardella hypoleuca ssp. *lanata*, Felt-leaved rock mint -- southern foothill peak tops
Monardella macrantha ssp. *hallii*, Hall's monardella -- montane forest
Monardella nana ssp. *leptosiphon*, San Felipe monardella -- montane chaparral and conifer forest, near Riverside border
Monardella stoneae, -- in canyons around Otay and Tecate Mountains
Monardella viminea (= M. linoides ssp. *viminea)*, Willowy monardella [FE][CE][MSCP narrow endemic] -- coastal canyons
Muilla clevelandii, San Diego goldenstar -- coastal mesas and clay soils
Navarretia fossalis, Spreading navarretia [FT] -- vernal pools
Navarretia peninsularis, Peninsular navarretia -- moist montane areas near Cuyamaca Lake
Navarretia prostrata, Prostrate navarretia -- vernal pools
Nemacaulis denudata var. *denudata*, Coast woolly-heads -- sandy coastal areas
Nolina cismontana, Chaparral beargrass -- Magee Ridge, Viejas Mtn.
Nolina interrata, Dehesa beargrass [CE][MSCP narrow endemic] -- chaparral and CSS on gabbro soils in southern foothills
Opuntia parryi var. *serpentina (Clylindropuntia californica)*, Snake cholla [MSCP narrow endemic] -- south CSS
Orcuttia californica, California Orcutt grass [FE][CE] -- large vernal pools in California
Packera ganderi (= Senecio g.), Gander's butterweed [CA rare] -- gabbro soils in interior regions
Phacelia stellaris, Brand's phacelia -- sandy soils near the coast
Pinus torreyana ssp. *torreyana*, Torrey pine -- Coastal mixed chaparral at Del Mar (applies to naturally occurring trees)
Poa atropurpurea, San Bernardino bluegrass [FE] -- montane meadows
Pogogyne abramsii, San Diego mesa mint [FE][CE] -- vernal pools
Pogogyne nudiuscula, Otay mesa mint [FE][CE] -- vernal pools in Otay Mesa
Quercus dumosa, Nuttall's scrub oak -- maritime chaparral
Ribes canthariforme, Morena currant -- moist areas in southern interior chaparral
Ribes viburnifolium, Santa Catalina Island currant -- coastal canyons, chaparral, woodlands, Santa Catalina Island, Imperial Beach, and Baja California
Rorippa gambellii, Gambel's watercress [FE][CT] -- montane streams, marshes, lake margins, Julian
Rubus glaucifolius var. *ganderi*, Cuyamaca raspberry -- montane forest near Cuyamaca
Satureja chandleri, San Miguel savory -- gabbro and metavolcanic soils in interior foothills, Jamul/Dulzura and Fallbrook areas
Scutellaria bolanderi ssp. *austromontana*, Southern skullcap -- wet chaparral and montane areas
Sibaropsis hammittii, Hammitt's claycress -- gabbro foothills, Viejas Mtn
Streptanthus campestris, Southern jewelflower -- pinyon-juniper area
Stylocline citroleum, Oil neststraw -- coastal areas, last collected in 1935
Suaeda esteroa, Estuary seablite -- coastal salt marsh
Tetracoccus dioicus, Parry's tetracoccus -- chaparral on gabbro and metavolcanic soils
Thermopsis californica var. *semota*, Velvety false lupine -- montane meadows
Viguiera purissimae, La Purissima viguiera -- found on MCAS Camp Pendleton, near Orange Co.
Xylorhiza orcuttii, Orcutt's woody aster -- gypsum soils in desert canyons

LIST B (Plants rare, threatened or endangered in California but more common elsewhere)

Adolphia californica, San Diego adolphia -- clay soils in CSS, chaparral and grasslands
Agave shawii, Shaw's agave [MSCP narrow endemic] -- coastal terraces
Ambrosia chenopodiifolia, San Diego bur-sage -- CSS around Otay
Astragalus insularis var. *harwoodii*, Harwood's milkvetch -- desert dunes at eastern base of mountains, sandy or gravely
Ayenia compacta, Ayenia -- desert canyons

Bergerocactus emoryi, Golden snake cactus -- coastal bluff and near Otay Mountain in maritime succulent scrub
Bursera microphylla, Elephant tree -- desert slopes
Calliandra eriophylla, Fairy duster -- desert canyons, sandy or rocky
Carlowrightia arizonica, Arizona carlowrightia -- desert scrub, sandy, granitic alluvium
Ceanothus verrucosus, Wart-stemmed ceanothus -- coastal mixed chaparral
Chamaesyce arizonica, Arizona spurge -- sandy desert scrub
Colubrina californica, Las Animas colubrina -- high desert scrub
Cordylanthus orcuttianus, Orcutt's bird's-beak -- CSS in South County near Otay, Chula Vista and Imperial Beach
Coreopsis maritima, Sea dahlia -- coastal bluff
Dudleya attenuata ssp. *orcuttii*, Orcutt's dudleya -- Border Field State Park
Ericameria palmeri ssp. *palmeri*, Palmer's goldenbush [MSCP narrow endemic] -- south coastal and interior arroyos, mesic
Erodium macrophyllum, Large-leaf fillary -- cismontane woodland, grasslands
Eucnide rupestris, Rock nettle -- desert canyons and cliff bottoms
Euphorbia misera, Cliff spurge -- coastal bluff
Ferocactus viridescens, Coast barrel cactus -- coastal mesas and hillsides
Frankenia palmeri, Palmer's frankenia/yerba reuma -- salt marsh near South Bay
Geraea viscida, Sticky geraea -- southern foothill and desert transition, chaparral, often in disturbed areas
Herissantia crispa, Curly herissantia -- eastern desert slopes
Heuchera rubescens var. *versicolor*, San Diego County alumroot -- rocky mountain cliff slopes, conifer forest, chaparral, Hot Springs & Palomar Mts.
Hulsea mexicana, Mexican hulsea -- desert mountain areas near Jacumba
Ipomopsis tenuifolia, Slender-leaved ipomopsis -- desert transition in SE part of County
Iva hayesiana, San Diego marsh-elder -- south coastal arroyos and ravines
Lewisia brachycalyx, Southwestern bitterroot -- near Cuyamaca Lake, conifer forests and meadows/seeps
Linanthus bellus, Desert beauty -- interior and desert transition chaparral in southern edge of County, sandy
Lycium parishii, Parish's desert-thorn -- low desert flats
Machaeranthera asteroides var. *lagunensis*, Laguna Mountain aster [CA rare] -- meadows and openings in forest on Mt. Laguna
Malperia tenuis, Brown turbins -- desert pavement
Matelea parvifolia, Climbing spearleaf -- desert washes and canyons
Mentzelia hirsutissima, Hairy stickleaf -- sandy soil, low desert
Nama stenocarpum, Mud nama -- muddy, lake edges
Nemacaulis denudata var. *gracilis*, Slender woolly-heads -- sandy desert areas and coastal dunes
Ornithostaphylos oppositifolia, Palo blanco -- hills south of Tijuana River valley
Quercus cedrosensis, Cedros Island oak -- south slope of Otay Mountain
Rhus trilobata var. *simplicifolia*, Single-leaf basketbush -- pinyon juniper, Pinyon and Vallecito Mts.
Rosa minutifolia, Small-leaved rose [CA rare] -- Otay Mesa, CSS/chaparral,
Salvia munzii, Munz's sage -- southern CSS/chaparral near Otay Mountain and Otay Mesa, also Dictionary Hill and Jamul Mts.
Selaginella eremophila, Desert spike-moss -- desert slopes, gravelly/rocky
Senecio aphanactis, Rayless ragwort -- coastal scrub, chaparral, woodlands, alkaline
Senna covesii, Cove's cassia -- desert valley edges
Spermolepis echinata, Spermolepis -- Borrego Valley, sandy or rocky
Stemodia durantifolia, Blue streamwort -- mesic, sandy areas
Viola aurea, Golden violet -- pinyon-juniper areas, sandy

LIST C (Plants which may be quite rare, but need more information to determine their true rarity status)

Berberis fremontii, Fremont barberry -- interior chaparral, pinyon-juniper woodland, rocky
Camissonia lewisii, Lewis's sun cup -- CSS (?), grasslands, cismontane woodlands, coastal areas, sandy or clay
Ditaxis serrata var. *californica*, California ditaxis -- desert scrub
Dudleya alainiae, Reiser's dudleya -- rocky leeward slopes of mountains
Githopsis diffusa ssp. *filicaulis*, Mission Canyon bluecup -- CSS in Mission Valley, but also in Silverwood Wildlife Sanctuary
Hordeum intercedens, Vernal barley -- seeps and vernal pools
Myosurus minimus (apus), Little mousetail -- vernal pools
Opuntia wigginsii (Cylindropuntia), Wiggins cholla -- low desert, eastern edge of County, sandy

LIST D (Plants of limited distribution and are uncommon, but not presently rare or endangered)

Abronia maritima, Red sand-verbena -- sandy beach areas
Achnatherum diegoense, San Diego needlegrass -- clay soils in native grassy areas, chaparral and CSS, rocky, often mesic
Androsace elongata ssp. *acuta*, California androsace -- montane grassy slopes
Artemisia palmeri, Palmer's sage -- arroyo bottoms in chaparral, CSS, and riparian, sandy, mostly south part of County
Asplenium vespertinum, Western spleenwort -- chaparral, woodland, CSS, rocky
Astragalus crotalariae, Salton milkvetch -- desert transition
Astragalus lentiginosus var. *borreganus*, Borrego milkvetch -- desert dunes
Azolla mexicana, Mexican mosquito fern -- standing water on ponds
Calandrinia breweri, Brewer's calandrinia -- burned areas
Calandrinia maritima, Seaside calandrinia -- coastal bluff scrub, CSS, grassland, sandy areas
Calochortus catalinae, Catalina mariposa lily -- coastal grasslands, cismontane woodland, CSS, chaparral
Caulanthus simulans, Payson's jewelflower -- sandy, granitic locations in foothills and desert
Chamaebatia australis, Southern mountain misery -- chaparral, gabbro and metavolcanic soils
Chamaesyce revoluta, Thread-stemmed spurge -- Mojave Desert scrub, rocky
Chorizanthe leptotheca, Peninsular spineflower -- CSS and chaparral
Convolvulus simulans, Small-flowered morning glory -- coastal clay areas and serpentine seeps, chaparral, CSS, grasslands
Cryptantha costata, Ribbed cryptantha -- desert sandy soils
Cryptantha holoptera, Winged cryptantha -- desert gravels
Cynanchum utahense, Utah vine milkweed -- desert bajadas
Deinandra (Hemizonia) paniculata, Paniculate tarplant -- grassy areas, coast & foothills, Bonsall to Otay
Delphinium parishii ssp. *subglobosum*, Desert larkspur -- desert transition and rocky locations
Dichondra occidentalis, Western dichondra -- coastal mixed chaparral and North County CSS, grasslands, woodlands
Fritillaria biflora, Chocolate lily -- grasslands, usually on clay soils
Galium johnstonii, Johnston's bedstraw -- Palomar Mtn.
Gilia caruifolia, Caraway-leaved gilia -- east slopes of Palomar Mtn.
Harpagonella palmeri, Palmer's grappling hook -- CSS in South County, chaparral, grassland, clay
Heterotheca sessiliflora ssp. *sanjacintensis*, San Jacinto golden-aster -- North Mtn Ecoregion, mixed chaparral and mixed conifer
Holocarpha virgata elongata, Graceful tarplant -- coastal mesas and foothills
Horsfordia newberryi, Newberry's velvet-mallow -- Sonoran Desert scrub
Hulsea vestita callicarpha, Beautiful hulsea -- chaparral and coniferous forest
Hymenothrix wrightii, Wright's hymenothrix -- lower mountain woodlands and conifer forests
Juglans californica, California black walnut -- riparian areas near DeLuz
Juncus acutus var. *leopoldii*, Soutwestern spiny rush -- marshes, seeps and riparian areas
Juncus cooperi, Cooper's rush -- desert alkaline areas
Lathyrus splendens, Pride of California -- southern interior chaparral

Lilium humboldtii ssp. *ocellatum*, Ocellated Humboldt lily -- shaded montane canyons
Lycium californicum, California box-thorn -- coastal bluffs and scrub
Lyrocarpa coulteri var. *palmeri*, Palmer's lyrepod -- desert canyons
Machaeranthera juncea, Rush-like bristleweed -- chaparral and CSS in South County
Microseris douglasii var. *platycarpha*, Small-flowered microseris -- CSS and clay soils
Mimulus aridus, Desert monkey flower -- desert transition
Mimulus clevelandii, Cleveland's monkeyflower -- foothill and mountain peaks
Mimulus diffusus, Palomar monkeyflower -- montane and coastal mixed chaparral
Mirabilis tenuiloba, Slender-lobed four o'clock -- desert canyons
Mucronea californica, California spineflower -- coastal sandy soils (also inland)
Ophioglossum californicum, California adder's tongue fern -- vernal pools, coastal mesas, and coastal mixed chaparral, mesic
Opuntia wolfii (Cylindropuntia), Wolf's cholla -- low desert scrub
Orobanche parishii ssp. *brachyloba*, Short-lobed broomrape -- sandy bluffs
Pectocarya peninsularis, Baja California bur-comb -- rare in Borrego Valley
Penstemon clevelandii var. *connatus*, San Jacinto beardtongue -- rocky desert slopes and mountains
Penstemon thurberi, Thurber's beardtongue -- pinyon juniper areas, chaparral
Pentachaeta aurea, Golden-rayed pentachaeta -- woodlands, lower conifer forests, CSS, grasslands
Perideridia gairdneri ssp. *gairdneri*, Gairdner's yampah -- moist coastal and montane areas
Pilostyles thurberi, Thurber's pilostyles -- Carrizo Badlands Overlook, grows on *Psorothamnus emoryi*
Piperia cooperi, Cooper's rein orchid -- chaparral, woodland, grassland, elev. 15-1585m
Piperia leptopetala, Narrow-petaled rein orchid -- woodlands and conifer forests
Polygala cornuta var. *fishiae*, Fish's milkwort -- foothill peaks (chaparral, woodlands, riparian) especially metavolcanic and gabbro
Proboscidea althaeifolia, Desert unicorn-plant -- desert washes, sandy
Quercus engelmannii, Engelmann oak -- interior valleys and slopes
Romneya coulteri, Coulter's matilija poppy -- chaparral and CSS, often in burns
Rupertia rigida, Parish psoralea -- montane forest near Cuyamaca
Salvia eremostachya, Desert sage -- northern desert canyons, rocky/gravelly
Selaginella asprella, Bluish spike-moss -- montane chaparral, granitic/rocky
Selaginella cinerascens, Ashy spike-moss -- undisturbed CSS
Streptanthus bernardinus, Laguna Mtns. Jewelflower -- montane peak tops
Suaeda taxifolia, Woolly seablite -- margins of coastal salt marshes
Viguiera laciniata, San Diego sunflower -- CSS in southern part of County

Key to abbreviations

FE – Federally Endangered
FT – Federally Threatened
CE – California Endangered
CT – California Threatened
CA rare – rare in California, but not listed
NE – MSCP Narrow Endemic
CSS – Coastal sage scrub

Table 3

County of San Diego Sensitive Animal List

Group 1 Species

Invertebrates

Branchinecta sandiegoensis, San Diego fairy shrimp
Linderiella occidentalis, California lindellaria
Streptocephalus woottoni, Riverside fairy shrimp
Euphydryas editha quino, Quino checkerspot butterfly
Papilio multiculdata, Two-tailed swallowtail
Apodemia mormo peninsularis, Peninsular metalmark
Mitoura thornei, Thorne's hairstreak butterfly
Lycaena hermes, Hermes copper
Plebejus saepiolis hilda, Hilda blue
Euphys vestris harbisoni, Dun skipper
Panoquina errans, Wandering salt marsh skipper
Pseudocopaeodes eunus eunus, Alkali skipper
Pyrgus ruralis lagunae, Laguna Mountain skipper
Coelus globosus, Globose dune beetle

Fish

Eucyclogobius newberryi, Tidewater goby
Gila orcutti, Arroyo chub
Oncorhynchus mykiss, Rainbow Trout -- Steelhead form

Reptiles and Amphibians

Batrachoseps aridus, Desert slender salamander
Ensatina eschscholtzii klauberi, Large-blotched salamander
Bufo microscaphus californicus, Arroyo southwestern toad
Rana aurora draytoni, California red-legged frog
Rana muscosa, Mountain yellow-legged frog
Clemmys marmorata pallida, Southwestern pond turtle
Coleonyx variegatus abbottii, San Diego banded gecko
Uma notata notata, Colorado Desert fringe-toed lizard
Phrynosoma mcallii, Flat-tailed horned lizard
Thamnophis hammondii, Two-striped garter snake

Birds

Aechmophorus occidentalis, Western Grebe
Plegadis chihi, White-faced ibis
Cathartes aura, Turkey vulture
Circus cyaneus hudsonius, Northern harrier
Elanus caeruleus, White-tailed kite
Accipiter striatus, Sharp-shinned hawk
Accipiter cooperi, Cooper's hawk
Buteo lineatus, Red-shouldered hawk
Buteo swainsoni, Swainson's hawk (Winter)
Buteo regalis, Ferruginous hawk (Winter)
Aquila chrysaetos, Golden eagle
Haliaeetus leucocephalus, Bald eagle (Winter)
Pandion haliaetus, Osprey (Rarely breeds)
Falco mexicanus, Prairie falcon
Falco peregrinus anatum, American peregrine falcon
Rallus longirostris levipes, Light-footed clapper rail
Charadrius alexandrinus nivosus, Western snowy plover
Sterna elegans, Elegant tern
Sterna antillarum browni, California least tern
Rynchops niger, Black skimmer
Coccyzus americanus occidentalis, Yellow-billed cuckoo
Asio otus, Long-eared owl
Strix occidentalis occidentalis, California spotted owl
Athene cunicularia hypugea, Burrowing owl
Melanerpes lewis, Lewis' woodpecker (Winter)
Empidonax trailii extimus, Southwestern willow flycatcher
Pyrocephalus rubinus, Vermilion flycatcher
Lanius ludovicianus , Loggerhead shrike
Vireo vicinior, Gray vireo
Vireo bellii pusillus, Least Bell's vireo
Progne subis, Purple Martin
Riparia riparia, Bank swallow (Formerly bred)
Campylorhynchus brunnicapillus couesi, San Diego cactus wren
Polioptila californica, California gnatcatcher
Toxostoma crissale, Crissal thrasher (Mesquite riparian)
Ictera virens, Yellow-breasted chat
Amphispiza belli belli, Bell's sage sparrow
Aimophila ruficeps canescens, Rufous-crowned sparrow
Ammodramus savannarum, Grasshopper sparrow
Passerculus sandwichensis beldingii, Belding's savannah sparrow
Agelaius tricolor, Tricolored blackbird

Mammals

Perognathus longimembris pacificus, Pacific pocket mouse
Dipodomys stephensi, Stephens' kangaroo rat
Ovis canadensis nelsoni, Peninsular bighorn sheep

Group 2 Species

Invertebrates

Ariolimax columbianus stramineas, Palomar banana slug
Helminthoglypta traski coelata, Peninsular Range shoulderband snail
Tryonia imitator, Mimic tryonia snail
Brennania belkini, Belkin's dune fly
Cicindela gabbi, Gabb's tiger beetle
Cicindela latesignata latesignata, Sand dune tiger beetle
Cicindela sinilis frosti, Tiger beetle
Cicindela trifasciata sigmoidia, Mudflat tiger beetle
Cincindela hirticollis gravida, Sandy beach tiger beetle
Cincindela latesignata obliviosa, Oblivious tiger beetle
Phobetus robinsoni, Robinson's rain beetle
Trigonoscuta blaisdelli, Blaisdell trigonoscuta weevil
Danaus plexippus, Monarch butterfly
Megathymus yuccae harbisoni, Coastal giant skipper

Fish

Cyprinodon macularis, Desert pupfish
Gasterosteus aculeatus williamsoni, Unarmored three-spine stickleback

Reptiles and Amphibians

Taricha torosa torosa, California newt
Scaphiopus hammondii, Western spadefoot toad
Anniella pulchra pulchra, Silvery legless lizard
Coleonyx switaki, Barefoot gecko
Sauromalus obesus, Chuckwalla
Sceloporus graciosus vandenburgianus, Southern sagebrush lizard
Phrynosoma coronatum blainvillei, San Diego horned lizard
Eumeces skiltonianus interparietalis, Coronado skink
Aspidoscelis hyperythrus beldingi (=*Cnemidophorus hyperythrus*), Belding's orange-throated whiptail
Aspidoscelis tigris stejnegeri (= *Cnemidophorus tigris multiscutatus*), Coastal western whiptail
Charina trivirgata roseofusca, Coastal rosy boa
Diadophis punctatus similes, San Diego ringneck snake
Salvadora hexalepis virgultea, Coast patch-nosed snake
Lampropeltis zonata pulchra, San Diego mountain kingsnake
Thamnophis sirtalis ssp. *novum,* South Coast garter snake
Crotalus ruber rubber, Northern red diamond rattlesnake

Birds

Gavia immer, Common loon (Winter)
Oceanodroma furcata plumbea, Fork-tailed storm petrel (Ocean)
Oceanodroma homochroa, Ashy storm petrel (Ocean)
Oceanodroma melania, Black storm petrel (Ocean)
Phalacrocorax auritus, Double-crested cormorant (Non-breeding)
Pelecanus occidentalis californicus, California brown pelican
Pelecanus erythrorhynchos, American white pelican (Winter)
Anser caerulescens, Snow goose (Winter)
Branta canadensis, Canada goose (Winter)
Mycteria americana, Wood stork (Non-breeding, very rare)
Anas strepera, Gadwall
Dendrocygne bicolor, Fulvous whistling-duck
Aythya americana, Redhead
Bucephala islandica, Barrow's goldeneye (Winter)
Ixobrychus exilis hesperis, Least bittern
Ardea herodias, Great blue heron
Butorides striatus, Green heron
Egretta rufescens, Reddish egret
Grus canadensis, Sandhill crane
Mycteria Americana, Wood stork (Non-breeding, very rare)
Falco columbarius, Merlin (Winter)
Oreortyx pictus eremophila, Mountain quail
Numenius americanus, Long-billed curlew (Non-breeding)
Laterallus jamaicensis coturniculus, California black rail (extirpated)
Charadrius montanus, Mountain plover (Winter)
Larus atricilla, Laughing gull (Non breeding, very rare)
Larus californicus, California gull (Non-breeding)
Chlidonias niger, Black tern (Non-breeder)
Cerorhinca monocerata, Rhinoceros auklet (Oceanic – Winter)
Endomychura hypoleuca, Xantus murrelet (Oceanic)
Fratercula cirrhata, Tufted puffin (Oceanic)
Tyto alba, Common barn-owl
Asio flammeus, Short-eared owl (Winter)
Cypseloides niger, Black swift (Non-breeder)
Contopus borealis, Olive-sided flycatcher
Eremophila alpestris actis, Horned lark
Sialia mexicana, Western bluebird
Dendroica petechia brewsteri), Yellow warbler
Toxostoma bendirei, Bendire's thrasher (Non-breeding)
Piranga rubra, Summer Tanager
Junco hyemalis caniceps, Gray-headed junco (Winter-rare)
Toxostoma lecontei lecontei, Leconte's thrasher
Passerculus sandwichensis rostratus, Large-billed savannah sparrow

Mammals

Chaetodipus californicus femoralis, Dulzura Calif. pocket mouse
Chaetodipus fallax fallax, Northwestern San Diego pocket mouse
Chaetodipus fallax pallidus, Pallid San Diego pocket mouse
Perognathus longimembris brevinasus, Los Angeles little pocket mouse
Perognathus longimembris internationalis, Jacumba little pocket mouse

<u>Mammals</u>, con't. *Onychomys torridus Ramona,* Southern grasshopper mouse *Neotoma lepida intermedia,* San Diego desert woodrat *Lepus californicus bennettii,* San Diego black-tailed jackrabbit *Odocoileus hemionus,* Southern mule deer *Macrotus californicus,* California leaf-nosed bat *Choeronycteris mexicana,* Mexican long-tongued bat *Myotis evotis,* Long-eared myotis *Myotis thysanodes,* Fringed myotis *Myotis volans,* Long-legged myotis *Myotis ciliolabrum,* Small-footed myotis *Myotis yumanensis,* Yuma myotis *Lasiurus blossevillii,* Western red bat *Euderma maculatum,* Spotted bat *Corynorhinus townsendii,* Townsend's big-eared bat *Antrozous pallidus,* Pallid bat *Nyctinomops femorosaccus,* Pocketed free-tailed bat *Nyctinomops macrotis,* Big free-tailed bat *Eumops perotis californicus,* Greater western mastiff bat *Bassariscus astutus,* Ringtail *Taxidea taxus,* American badger *Felis concolor,* Mountain lion	

Table 4

Terrestrial Vegetation Communities in San Diego County
Based on Holland's Descriptions

Suggested by
Thomas Oberbauer, DPLU
(revised March 2005)
***** Indicates revisions to Holland to the immediate left of asterisk

10000	NON-NATIVE VEGETATION, DEVELOPED AREAS, OR UNVEGETATED HABITAT					
	11000	Non-Native Vegetation*				
		11100	Eucalyptus Woodland			
		11200	Disturbed Wetland			
		11300	Disturbed Habitat			
	12000	Urban/Developed				
	13000	Unvegetated Habitat*				
		13100	Open Water			
			13110	Marine		
				13111	Subtidal*	
				13112	Intertidal*	
			13120	Bay		
				13121	Deep Bay*	
				13122	Intermediate Bay*	
				13123	Shallow Bay*	
			13130	Estuarine		
				13131	Subtidal*	
				13132	Intertidal*	
				13133	Brackish Water*	
			13140	Fresh Water*		
		13200	Non-Vegetated Channel, Floodway, Lakeshore Fringe*			
		13300	Saltpan/Mudflats*			
		13400	Beach			
	18000	General Agriculture				
		18100	Orchards and Vineyards			
		18200	Intensive Agriculture - Dairies, Nurseries, Chicken Ranches			
		18300	Extensive Agriculture – Field/Pasture*, Row Crops			
			18310	Field/Pasture*		
			18320	Row Crops		
20000	DUNE COMMUNITY					
	21000	Coastal Dunes				
		21100	Active Coastal Dunes (occurred at one time but now nearly extirpated)			
		21200	Foredunes			
			21230	Southern Foredunes (tiny fragments remaining in Imperial Beach and Los Peñasquitos Lagoon)		
	22000	Desert Dunes				
		22100	Active Desert Dunes (very little in Borrego Valley)			
		22300	Stabilized and Partially-Stabilized Desert Sand Field (mostly in the eastern part of Borrego Valley; may be large enough to map from aerials)			
	24000	Stabilized Alkaline Dunes*****				
29000	ACACIA SCRUB*****					

30000	SCRUB AND CHAPARRAL					
	31000	Coastal Bluff Scrub				
		31200	Southern Coastal Bluff Scrub (mapped in Point Loma and Torrey Pines State Park)			
	32000	Coastal Scrub				
		32400	Maritime Succulent Scrub (Point Loma, etc.)			
		32500	Diegan Coastal Sage Scrub			
			32510	Coastal form*		
			32520	Inland form (>1,000 ft. elevation)*		
		32700	Riversidian Sage Scrub			
			32710	Riversidian Upland Sage Scrub (scrub on Banner Grade may fit this category)		
			32720	Alluvial Fan Scrub		
	33000	Sonoran Desert Scrub				
		33100	Sonoran Creosote Bush Scrub			
		33200	Sonoran Desert Mixed Scrub			
			33210	Sonoran Mixed Woody Scrub		
			33220	Sonoran Mixed Woody and Succulent Scrub		
			33230	Sonoran Wash Scrub*		
		33300	Colorado Desert Wash Scrub*			
		33500	Calcicolous Scrub*			
		33600	Encelia Scrub*			
	34000	Mojavean Desert Scrub				
		34300	Blackbush Scrub (micro locations on eastern edge of mountains)			
	35000	Great Basin Scrub				
		35200	Sagebrush Scrub			
			35210	Big Sagebrush Scrub		
	36000	Chenopod Scrub				
		36110	Desert Saltbush Scrub			
		36120	Desert Sink Scrub (in Borrego sink)			
	37000	Chaparral				
		37100	Upper Sonoran Mixed Chaparral			
			37120	Southern Mixed Chaparral		
				37121	Granitic Southern Mixed Chaparral	
				37122	Mafic Southern Mixed Chaparral (occurs on Los Posas and Boomer soils)	
			37130	Northern Mixed Chaparral*		
				37131	Granitic Northern Mixed Chaparral*	
				37132	Mafic Northern Mixed Chaparral*	
		37200	Chamise Chaparral			
			37210	Granitic Chamise Chaparral*		
			37220	Mafic Chamise Chaparral*		
		37300	Red Shank Chaparral (near Campo and Chihuahua Valley)			
		37400	Semi-Desert Chaparral (same as Desert Transition Chaparral; occurs in areas like Jacumba)			
		37500	Montane Chaparral			
			37510	Mixed Montane Chaparral		
			37520	Montane Manzanita Chaparral		
			37530	Montane Ceanothus Chaparral		
			37540	Montane Scrub Oak Chaparral		
		37800	Upper Sonoran Ceanothus Chaparral			
			37810	Buck Brush Chaparral		

		37830	*Ceanothus crassifolius* Chaparral	
	37900	Scrub Oak Chaparral		
	37A00	Interior Live Oak Chaparral		
	37B00	Upper Sonoran Manzanita Chaparral		
	37C00	Maritime Chaparral		
		37C30	Southern Maritime Chaparral (occurs in coastal San Diego County and has been described as Coastal Mixed Chaparral)	
		37G00	Coastal Sage-Chaparral Scrub	
		37K00	Flat-topped Buckwheat*****	
39000	Upper Sonoran Subshrub Scrub			
40000	GRASSLANDS, VERNAL POOLS, MEADOWS, AND OTHER HERB COMMUNITIES			
	42000	Valley and Foothill Grassland		
		42100	Native Grassland	
			42110	Valley Needlegrass Grassland
			42120	Valley Sacaton Grassland
		42200	Non-Native Grassland	
			42210	Artichoke Thistle Dominant / Non-Native Grassland
		42300	Wildflower Field (this is actually a subset of the above, but would be pertinent in the Cuyamaca Lake and Mataguay Valley areas)	
		42400	Foothill/Mountain Perennial Grassland*****	
			42470	Transmontane Dropseed Grassland*
	44000	Vernal Pool		
		44300	Southern Vernal Pool	
			44320	San Diego Mesa Vernal Pool
				44321 San Diego Mesa Hardpan Vernal Pool (northern mesas)
				44322 San Diego Mesa Claypan Vernal Pool (southern mesas)
	45000	Meadow and Seep		
		45100	Montane Meadow	
			45110	Wet Montane Meadow
			45120	Dry Montane Meadows
		45300	Alkali Meadows and Seeps	
			45320	Alkali Seep
		45400	Freshwater Seep	
	46000	Alkali Playa Community		
		46100	Badlands/Mudhill Forbs*****	
50000	BOG AND MARSH			
	52000	Marsh and Swamp		
		52100	Coastal Salt Marsh	
			52120	Southern Coastal Salt Marsh
		52300	Alkali Marsh	
			52310	Cismontane Alkali Marsh
		52400	Freshwater Marsh	
			52410	Coastal and Valley Freshwater Marsh
			52420	Transmontane Freshwater Marsh (San Felipe Creek)
			52430	Montane Freshwater Marsh
			52440	Emergent Wetland
60000	RIPARIAN AND BOTTOMLAND HABITAT			
	61000	Riparian Forests		
		61300	Southern Riparian Forest	
			61310	Southern Coast Live Oak Riparian Forest

		61320	Southern Arroyo Willow Riparian Forest	
		61330	Southern Cottonwood-willow Riparian Forest	
	61500	Montane Riparian Forest		
		61510	White Alder Riparian Forest (Cold Spring in the Cuyamaca Mountains)	
	61800	Colorado Riparian Forest		
		61810	Sonoran Cottonwood-willow Riparian Forest (Coyote Canyon)	
		61820	Mesquite Bosque (Borrego Sink)	
62000	Riparian Woodlands			
	62200	Desert Dry Wash Woodland		
	62300	Desert Fan Palm Oasis Woodland		
	62400	Southern Sycamore-alder Riparian Woodland (Pauma and Pala areas)		
63000	Riparian Scrubs			
	63300	Southern Riparian Scrub		
		63310	Mule Fat Scrub	
		63320	Southern Willow Scrub	
			63321	*Arundo donax* Dominant / Southern Willow Scrub*
	63400	Great Valley Scrub*		
		63410	Great Valley Willow Scrub*	
	63500	Montane Riparian Scrub		
	63800	Colorado Riparian Scrub		
		63810	Tamarisk Scrub	
		63820	Arrowweed Scrub	
70000	WOODLAND			
71000	Cismontane Woodland			
	71100	Oak Woodland		
		71120	Black Oak Woodland (Cuyamaca and Mesa Grande)	
		71160	Coast Live Oak Woodland	
			71161	Open Coast Live Oak Woodland
			71162	Dense Coast Live Oak Woodland
		71180	Engelmann Oak Woodland	
			71181	Open Engelmann Oak Woodland
			71182	Dense Engelmann Oak Woodland
	71200	Walnut Woodland		
		71210	California Walnut Woodland (micro locations, such as at De Luz)	
72000	Pinon and Juniper Woodlands			
	72300	Peninsular Pinon and Juniper Woodlands		
		72310	Peninsular Pinon Woodland	
		72320	Peninsular Juniper Woodland and Scrub	
75000	Sonoran Thorn Woodland			
	75100	Elephant Tree Woodland (micro locations, such as at Indian Wash)		
77000	Mixed Oak Woodland*****			
78000	Undifferentiated Open Woodland*****			
79000	Undifferentiated Dense Woodland*****			
80000	FOREST			
81000	Broadleaved Upland Forest			
	81100	Mixed Evergreen Forest (Palomar Mountain)		
	81300	Oak Forest		
		81310	Coast Live Oak Forest	
		81320	Canyon Live Oak Forest (may be represented in San Diego County in some form but apparently is intended for more	

			northern areas)
		81340	Black Oak Forest (as described in Holland represents apparent patches of oak in the midst of coniferous forests)
83000	Closed-cone Coniferous Forest		
	83100	Coastal Closed-cone Coniferous Forest	
		83140	Torrey Pine Forest (not actually a closed cone pine)
	83200	Interior Closed-cone Coniferous Forest	
		83230	Southern Interior Cypress Forest (83330, typo in original Holland document)
84000	Lower Montane Coniferous Forest		
	84100	Coast Range, Klamath and Peninsular Coniferous Forest*****	
		84140	Coulter Pine Forest
		84150	Bigcone Spruce (Bigcone Douglas Fir)-Canyon Oak Forest
	84200	Sierran Coniferous Forest	
		84230	Sierran Mixed Coniferous Forest
	84500	Mixed Oak/Coniferous/Bigcone/Coulter*****	
85000	Upper Montane Coniferous Forest		
	85100	Jeffrey Pine Forest	

Table 5

Habitats and Mitigation Ratios

These ratios for mitigation apply to unavoidable impacts. Following avoidance and minimization of on-site resources per Attachment B, on-site lands of long-term biological value may be credited against potential off-site mitigation on an in-kind basis (unless otherwise specified in an applicable county-adopted conservation plan). These ratios apply OUTSIDE of approved MSCP Plans. For lands inside approved MSCP Plans, consult the appropriate plan for required mitigation ratios.

Holland Codes	Vegetation Communities	Mitigation Ratio
11100	Eucalyptus Woodland	None
11200	Disturbed Wetland	3:1
11300	Disturbed Habitat	None
12000	Urban/Developed	None
13100	Open Water (13110-13140)	3:1
13200	Non-Vegetated Channel, Floodway, Lakeshore Fringe	3:1
13300	Saltpan/Mudflats	3:1
13400	Beach	3:1
18100	Orchards and Vineyards	None
18200	Intensive Agriculture - dairies, nurseries, chicken ranches	None
18310	Extensive Agriculture - field/pasture *	0.5:1
18320	Extensive Agriculture - row crops	None
21000	Coastal Dunes (21100-21230)	3:1
22000	Desert Dunes (22100-22300)	2:1
24000	Stabilized Alkaline Dunes	3:1
29000	Acacia Scrub	3:1
31000	Coastal Bluff Scrub	3:1
32400	Maritime Succulent Scrub	3:1
32500	Diegan Coastal Sage Scrub (32510-32520)	2:1
32700	Riversidian Sage Scrub (32710-32720)	2:1
33100	Sonoran Creosote Bush Scrub	1:1
33200	Sonoran Desert Mixed Scrub (33210-33230)	1:1
33300	Colorado Desert Wash Scrub	3:1
33500	Calcicolous Scrub	1:1
33600	Encelia Scrub	2:1
34000	Mojavean Desert Scrub (34300)	1:1
35000	Great Basin Scrub (35200-35210)	2:1
36110	Desert Saltbush Scrub	2:1
36120	Desert Sink Scrub	3:1
37121	Granitic Southern Mixed Chaparral	0.5:1

37122	Mafic Southern Mixed Chaparral	3:1
37131	Granitic Northern Mixed Chaparral	0.5:1
37132	Mafic Northern Mixed Chaparral	3:1
37210	Granitic Chamise Chaparral	0.5:1
37220	Mafic Chamise Chaparral	3:1
37300	Red Shank Chaparral	1:1
37400	Semi-desert Chaparral	1:1
37500	Montane Chaparral (37510-37540)	1:1
37800	Upper Sonoran Ceanothus Chaparral (37810-37830)	1:1
37900	Scrub Oak Chaparral	1:1
37A00	Interior Live Oak Chaparral	2:1
37B00	Upper Sonoran Manzanita Chaparral	1:1
37C00	Southern Maritime Chaparral (37C30)	3:1
37G00	Coastal Sage-Chaparral Scrub	2:1
37K00	Flat-topped Buckwheat	2:1
39000	Upper Sonoran Subshrub Scrub	1:1
42100	Native Grassland (42110-42120)	3:1
42200	Non-native Grassland *	0.5:1
42300	Wildflower Field	3:1
42400	Foothill/Mountain Perennial Grassland (42470)	3:1
44000	Vernal Pool (44300-44322)	5:1
45000	Meadow and Seep (45100-45400)	3:1
46000	Alkali Playa Community (46100)	3:1
52000	Marsh and Swamp (52100-52440)	3:1
61300	Riparian Forests (61300-61820)	3:1
62000	Riparian Woodlands (62200-62400)	3:1
63000	Riparian Scrubs (63300-63820)	3:1
70000	Woodland (71000-79000)	3:1
80000	Forest (81000-85100)	3:1

* The mitigation ratio shall be 1:1 if the site is occupied by burrowing owl or the land is considered part of the Ramona grasslands.